

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 13.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-007669**Date Inspected:** 02-Jul-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** Oregon Iron Works Clackamas, Or.**Location:** Clackamas, Oregon**CWI Name:** Mike Gregson, Jose Salazar**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Hinge K Pipe Beams**Summary of Items Observed:**

On this date, Caltrans Quality Assurance Inspector (QA) Sherri Brannon is present at the Oregon Iron Works, Inc. (OIW) jobsite in Clackamas, Oregon for the purpose of observing fabrication of the Hinge K Pipe Beams.

**OIW Fabrication Shop-Bay 1:**

QA Inspector Brannon observed no production activity on Hinge K Pipe Beam sub assemblies noted below for the duration of the shift.

Hinge-K Pipe Beam Sub Assembly, cap plates MK#109.

**OIW Fabrication Shop-Bay 3 (sub-assembly):**

QA Inspector Brannon randomly observed OIW qualified welder Mr. Craig Jacobsen ID#J6 welding joining radial stiffener MK #d108, MK#e107 and MK#b107 (HPS 485 W) to stiffener plates MK# a106 (HPS 485 W) for hinge k pipe beam base assembly section a102-4. The partial joint penetration (PJP) groove welds are identified as weld joint #W1-81, W1-83 and W1-85. Mr. Jacobsen was observed welding in the 1G (flat) position utilizing submerged arc welding (SAW) process with a 2.4mm diameter electrode, filler metal brand Lincoln Electric LA85 class F9A4-Eni5-G-H2. QA Inspector Brannon observed the OIW QC CWI Inspector's Mr. Jose Salazar and Mr. Mike Gregson verifying that the pre-heat of 350°F and welding parameters were in accordance with the Welding Procedure Specification (WPS). Welding parameters measured by QA are as follows for fill: 585 amps, 35.0 volts and a travel speed of 457mm per minute appear to be in conformance with approved welding procedure specification WPS 4020 revision number 1.

**OIW Fabrication Shop-Bay 3 (sub-assembly):**

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QA Inspector Brannon randomly observed OIW qualified welder Mr. John Tellone ID#T23 welding joining radial stiffener MK #c106, Mk#108 and MK#b107 (HPS 485 W) to stiffener plates MK# b106 and MK#ab106 (HPS 485 W) for hinge k pipe beam base assembly section a102-4. The fillet and partial joint penetration (PJP) groove welds are identified as weld joint #W1-73, W1-104 and W1-108. Mr. Tellone was observed welding in the 1G (flat) position utilizing submerged arc welding (SAW) process with a 2.4mm diameter electrode, filler metal brand Lincoln Electric LA85 class F9A4-Eni5-G-H2. QA Inspector Brannon observed the OIW QC CWI Inspector's Mr. Jose Salazar and Mr. Mike Gregson verifying that the pre-heat of 350°F and welding parameters were in accordance with the Welding Procedure Specification (WPS). Welding parameters measured by QA are as follows for fill: 585 amps, 35.0 volts and a travel speed of 457mm per minute respectively appear to be in conformance with approved welding procedure specification WPS 4020 revision number 1.

### OIW Fabrication Shop-Bay 3:

QA Inspector Brannon randomly observed OIW qualified welder Mr. Tim O'Brien ID#J6 and one helper joining ring stiffener plate MK#a125 (HPS 485 W) to hinge K pipe beam fuse half section MK#a124-8 (HPS 485W). The partial joint penetration (PJP) weld is identified as weld joint #WM3-14. Mr. O'Brien was observed welding in the 1G (flat) position utilizing submerged arc welding (SAW) process with a 2.4mm diameter electrode, filler metal brand Lincoln Electric LA85 class F9A4-Eni5-G-H2. QA Inspector Brannon observed the OIW QC CWI Inspector's Mr. Jose Salazar and Mr. Mike Gregson verifying that the pre-heat and welding parameters were in accordance with the Welding Procedure Specification (WPS). Welding parameters measured by QA are as follows for fill: 585.4 amps, 34.9 volts and a travel speed of 456mm per minute appear to be in conformance with approved welding procedure specification WPS 4020 revision number 1.

### OIW Fabrication Shop-Bay 3 (sub-assembly):

QA Inspector Brannon observed no production activity on Hinge K Pipe Beam sub assemblies noted below for the duration of the shift.

Hinge-K Pipe Beam Sub Assembly, Half fuse section MK#a124-16.

Hinge-K Pipe Beam Sub Assembly, MK#120A-7 – MK#a124-5 half fuse to MK#a124-15 half fuse.

### OIW Fabrication Shop-Bay 6 (sub-assembly):

QA Inspector Brannon randomly observed OIW qualified welder Mr. Igor Frolov ID#F17 grinding and patch welding starts and stops using soudotape 316L stainless steel overlay to hinge k pipe beam fuse sub-assembly120A-4. The weld joint is identified as 316L 3rd layer. Mr. Frolov was observed welding in the flat position utilizing automatic electro slag welding (ESW) overlay process with a .5mm x 60mm soudotape 316L stainless electrode, filler metal brand Soudotape class EQ316L automatic. QA Inspector Brannon observed the OIW QC CWI Inspector's Mr. Jose Salazar and Mr. Mike Gregson verifying that the pre-heat of 20°C and welding parameters were in accordance with the Welding Procedure Specification (WPS). Welding parameters observed by QA Inspector Brannon are as follows: 1200 amps, 25.2 volts and a travel speed of 210mm per minute appear to be in conformance with approved welding procedure specification (WPS 7003) revision number 0.

### OIW Fabrication Shop-Bay 6 (sub-assembly):

QA Inspector Brannon observed no production activity on Hinge K Pipe Beam sub assemblies noted below for the duration of this shift. Rough machining has been completed on the below fuse assemblies.

Hinge-K Pipe Beam Sub Assembly, MK#120A-1 – MK#a124-6 half fuse to MK#a124-7 half fuse.

Hinge-K Pipe Beam Sub Assembly, MK#120A-5 – MK#a124-2 half fuse to MK#a124-14 half fuse.

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Hinge-K Pipe Beam Sub Assembly, MK#120A-6 – MK#a124-9 half fuse to MK#a124-1 half fuse.

## A.G. Machine Works

QA Inspector Brannon and QA Lead Inspector Adame arrived at A&G Machining on this date. A&G personnel informed QA that rough machining of the 3rd layer had been completed on 7/1/09. A&G personnel went on to say that OIW will not be pick up the unit today. A&G personnel explained to QA that a final outside diameter of 1903mm was maintained and that an OIW machinist would be arriving today to verify dimensional outside diameter measurements and that fuse assembly 120A-2 would not be transfer, back to OIW fabrication shop until July 9, 2009.

## OIW Storage Yard

Hinge-K Pipe Beam Base Assembly, MK#102A-2 - MK#a111-2 forging to MK#a110-2 base plate idle.

Hinge-K Pipe Beam Base Assembly, MK#102A-3 - MK#a111-3 forging to MK#a110-3 base plate idle.

Note: QA observed pending 1st time ultrasonic testing (UT) repairs.

Hinge-K Pipe Beam Sub Assembly, MK#120A-3 – MK#a124-10 half fuse to MK#a124-12 half fuse with stainless steel overlay completed.

## Caltrans Status and Production Tracking:

QA Inspector Brannon also updated Caltrans status and production tracking logs for tracking of check samples, procedure qualification record (PQR), critical weld repairs (CWR), non-critical welding repairs (WRR), completed and in process welding, QC/QA non-destructive testing.

## Material, Equipment, and Labor Tracking:

QA Inspector Brannon performed a verification of personnel at OIW. QA Inspector Brannon observed 2 Supervisor, 2 Quality Control and 6 production personnel on this date.

The following digital photograph below illustrates observation of the activities being performed.



## Summary of Conversations:

As noted within this report.

## Comments

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This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Brannon,Sherri	Quality Assurance Inspector
<b>Reviewed By:</b>	Adame,Joe	QA Reviewer

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